

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 65-91 are pending in this application. Claims 65-66, 73-74, 80-81, and 87 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent application publication 2001/0014836 A1 to Tamaki et al. (herein "Tamaki"). Claims 67-72, 75-79, 82-86, and 88-91 were rejected under 35 U.S.C. § 103(a) as unpatentable over Tamaki in view of U.S. patent 5,539,652 to Tegethoff.

Addressing the above-noted prior art rejections, those rejections are traversed by the present response.

Initially, applicants note the claims are amended by the present response to clarify features recited therein. Specifically, the claims now consistently clarify that assembly information is stored for "electronic circuit boards", and for each respective electronic circuit board a plurality of parts information utilized in the respective electronic circuit board is stored. The claims also clarify an input of assembly information indicating one of the electronic boards is received, and parts information indicating parts utilized in the indicated electronic circuit board are retrieved.

The claims recite an assembly information storage storing information about a plurality of electronic circuit boards, and information of parts utilized in the electronic circuit boards, including names of the parts utilized in the electronic circuit boards.

Further, a parts information storage stores parts information including functions of the parts. In the claimed invention, information about the names, etc. of parts utilized in an electronic circuit board is obtained on the basis of input information identifying the electronic circuit board. Then, information about the functions, etc. of the parts forming the electronic circuit board is obtained based on the information about the names, etc. of the parts.

Further, parts information obtained corresponding to information of parts on the electronics circuit board can be replaced with information about other parts, having comparable functions. Thereby, replaced parts information can be generated and then stored.

As shown for example in Figures 1 and 4 in the present specification, a Resource database DB1 can store assembly information of parts in an electronic circuit board assembly and names of the parts. A parts information storage, such as Approved Parts DB in Figure 1, can store information including functions of parts corresponding to the parts information. Further, the resource parts list creating/editing unit 3 can retrieve parts information from the Resource DB1 and Approved Parts DB2 and can replace the parts information corresponding with the assembly information with other parts information, for example for other parts having a comparable function as parts in the retrieved electronic circuit board assembly, and can store that replaced parts information in a memory.

The features recited and clarified in the claims are believed to clearly distinguish over the applied art.

First, applicants submit none of the cited part discloses or suggests storing information about a plurality of electronic circuit boards including a listing of parts utilized in the electronic circuit boards. Further, applicants submit none of the cited art discloses or suggests receiving an input indicating one of the electronic circuit boards and retrieving parts information indicating the parts utilized in the indicated electronic circuit board.

The outstanding rejection cites Tamaki with respect to the above-noted features, and states:

Tamaki discloses that an electronic circuit board could be one of the products being created on a production line which meets the limitation, **each assembly corresponding to an electronic circuit board**. See page 10, paragraph [0155]. Examiner Note: A “product” is being interpreted as an “assembly”. Furthermore, Examiner is interpreting “a list of parts

information” as including the name of the parts used in the product.¹

Addressing that basis for the outstanding rejection, initially applicants note Tamaki does not disclose storing assembly information for a plurality of electronic circuit boards, or further storing information of each part utilized in the electronic circuit board. The cited paragraph [0155] in Tamaki merely notes electronic circuit boards can be warehoused as parts to be used on a production line. That disclosure in Tamaki does **not** indicate the system therein is directed to making an electronic circuit board, in contrast to the position in the Office Action. Moreover, applicants note even that position in the Office Action is unrelated to the claims.

The claims are **not** directed to an assembly line for assembling an electronic circuit board, but instead are directed to being able to create and/or edit structured parts list information that can be utilized for example in the design of electronic circuit boards. The claims are not directed to an assembly method as in Tamaki, as discussed in even further detail below.

Further, the fact that Tamaki recognizes an electronic circuit board can be a part in an assembly line only clarifies that Tamaki is **not** even related to the claimed features. In the claims, as noted above, and as even further clarified in the presently submitted claim amendments, assembly information for a plurality of electronic circuit boards is stored, and in addition parts utilized in the electronic circuit boards are stored. Tamaki recognizes an electronic circuit board as a single part, and thus ***teaches away*** from storing data of ***parts utilized in an electronic circuit board***. In that respect Tamaki teaches away from the claimed features.

¹ Office Action of September 20, 2007, page 3, lines 15-20 (original emphasis).

In maintaining the position that Tamaki would suggest storing assembly information for a plurality of electronic circuit boards, including parts utilized in the circuit boards, the outstanding Office Action also states:

Examiner disagrees that Tamaki does not disclose a plurality of products (i.e. assemblies, electronic circuit boards). See pages 1-2, paragraphs [0013], [0016], [0019], and [0021] which discuss a plurality of products in a production planning system.²

In reply to that grounds for rejection applicants point out the outstanding Office Action does not appear to be properly considering what the claims actually recite. The claims do not broadly recite storing information of a plurality of products in a production planning system. Instead, the claims are far more specific in reciting storing assembly information for a plurality of electronic circuit boards, including a name of each electronic circuit board, and storing for each respective electronic circuit board a plurality of parts information utilized in the respective electronic circuit board. The above-noted disclosures in Tamaki are not remotely related to any similar features.

Tamaki and Tegethoff are also further deficient for reasons as discussed in the previously submitted responses, and now reiterated below.

Tamaki is directed to a production system that can access a parts list storage section 2 for storing parts list information and a parts stock storage section 4 for indicating a stock of parts. Tamaki goes on to note the use of a data storage unit 10, a superfluous parts adjusting unit 112, and a deficient parts adjusting unit 111. However, such teachings in Tamaki merely disclose an operation that can ensure that desired parts are in stock.

Tamaki is not at all directed to a system for creating and/or editing structured parts list information. Instead Tamaki is directed to a manufacturing system that can ensure that a list of required parts is adequately stocked, and determine whether any parts are deficient or

² Office Action of September 20, 2007, page 15, lines 14-17 of prenumbered paragraph 6.

superfluous. Such a structure in Tamaki differs from the claims as currently written in many aspects.

Tamaki discloses a parts list storage section 2, but as noted above Tamaki does not disclose or suggest that storage element 2 stores information of a plurality of different electronic circuit board assemblies including parts, and information of a name of the parts, rather than just individual parts.

Tamaki also discloses a parts-in stock storage section 4 that is merely a listing of parts in storage and has no relation to the claimed features.

Tamaki also clearly fails to teach or suggest the “parts information retrieving device” or “assembly information update device” recited in the claims.

According to the claimed features, different parts information is retrieved. The first piece of information that is retrieved is assembly information to an electronic circuit board, for example to previously designed electronic circuit boards and known electronic circuit boards.³ The second piece of information retrieved is parts attribute information. For example such information can include information of parts such as a parts identification, function, name and manufacture, shape, prospect, price, and/or approval data, and as recited in the claims includes *function* information of other components, which is comparable with a function of a part presently retrieved.⁴ Based on those two pieces of information replaced parts information is generated. Such features are clearly not met by Tamaki.

With respect to the above-noted features the outstanding Office Action continues to note it would have been obvious that the “required parts” list of Tamaki would include a function of such parts. The Office Action specifically states:

...it would have been obvious to a person of ordinary skill in the art at the time of the invention that a list of “required parts”

³ See for example the present specification at page 11, line 25 to page 12, line 6.

⁴ See for example the present specification at page 13, lines 1-11.

would include the function of such parts because a “required part” would be identified by its use or function in the product.⁵

Applicants traverse the above-noted basis for the rejection as it is simply not taught or suggested in Tamaki, and no apparent reason has been given to modify Tamaki to meet the claim limitations.

First, Tamaki clearly does not disclose or suggest storing information of a *function* of a part. Also, in Tamaki a list of required parts would *not* include such a function and a part would *not* be identified by its use or function. Tamaki merely discloses the parts list storage section 2 providing a *list of required parts*. A list of required parts would *not* include its part’s function. In fact, storing information of a function of a part is actually contrary to the operation of the device of Tamaki, and would actually be taught away from by the device of Tamaki.

That is, Tamaki is not at all concerned about indicating a *function* of a part as such information is *irrelevant* in Tamaki.

The claims recite storing information of a function of a part because in the claims one part can be substituted for another part with a comparable function. Tamaki does not disclose any reason or objective for storing information of a function of a part.

In the claimed features an assembly information storage stores information directed to *a plurality of assemblies of electronic circuit boards, the assembly information including a name of parts utilized in the assembly*. As an example noted above, information directed to previously designed electronic circuit boards and known electronic circuit boards can be stored. The information of those circuit boards include names of the parts therein. Then, in the claimed invention parts information corresponding to the parts *of the electronic circuit board assembly* is output. Thus, in the claimed invention parts information for the parts that

⁵ Office Action of September 20, 2007, page 5, first full paragraph.

form the electronic circuit board component are then output, by the claimed “parts information storage”. Tamaki does not disclose any similar feature.

In Tamaki the parts list storage section 2 is merely a parts list storage section and does not store information of *a plurality of assemblies of electronic circuit boards, the assembly information including a name of parts utilized in the assembly*. Further, the parts stock storage section 4 in Tamaki merely indicates a stock of parts. In Tamaki if a part is not stocked, no information of that part would appear to be provided. Thus, Tamaki clearly does not output *parts attribute information including functions of parts corresponding to said parts information*, as required in the claims.

In maintaining the position that Tamaki would store information of a function of a part, the outstanding Office Action now further states:

Applicant argues Tamaki does not disclose the parts attribute information includes functions of parts. Tamaki does not expressly teach the “parts attribute information including functions of parts”; however, it was well known in the art at the time of the invention that any part of an assembly has a function. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that a list of “required parts” would include the function of such parts because a “required part” would be identified by its user function in the product.⁶

Applicants submit the above-noted grounds for rejection is simply correct in many aspects.

First, applicants note that of course it is the case that every part has a function, but that does not mean such a function is stored in a database. As discussed above in detail, the reason why the function information is stored in the present invention is to be able to substitute one part for another part with a similar function. As also discussed above in detail,

⁶ Office Action of September 20, 2007, page 17, lines 11-17.

Tamaki does not disclose or suggest any reason or objective for storing information of a function of a part.

The position stated in the Office Action appears to simply be that because a part has a function that information would have to be stored. However, a part has an infinite number of properties, and clearly is not the case that every property of a part would have to be stored in a database. For example parts have properties of their material, their hardness, multitudes of dimensions, cost, place of manufacture, etc. All parts have such inherent properties, but that does not at all indicate to one of ordinary skill in the art that such information would be stored in a database.

Further, there is clearly no requirement that parts be identified by their function. It is most common that a part would be identified by its serial number, manufacturer, or other identifier. The function is relevant in the claimed invention because one part can be substituted for another part with a similar function. Tamaki is not directed to realizing such an objective. Thereby, in Tamaki it is irrelevant to store function information of a part.

In such ways, the claims as currently written clearly distinguish over Tamaki.

Further, with respect to the further rejection based on Tamaki in view of Tegethoff, that rejection is traversed by the present response.

Tegethoff is directed to a method for manufacturing test simulation in electronic circuit design and relates to a tradeoff between productivity and design property.

The device disclosed by Tegethoff has no relation whatsoever to the device of Tamaki. Tamaki as noted above is directed to a system to ensure that parts are adequately stocked. Tegethoff is not directed to any type of such system and thus has no relevance whatsoever to the teachings in Tamaki.

The apparent reason set forth in the Office Action to combine the teachings in Tegethoff relative to those of Tamaki is also traversed. More specifically, the Office Action

states the teachings of prediction concerning operation, simulation, etc. in Tegethoff could be applied to the teachings in Tamaki “because early prediction of manufacturing behavior drives design changes which optimize the product’s manufacturability and testability, thus improving product quality and reducing cost and utilizing a parts list would help facilitate this prediction. See column 6 of Tegethoff”.⁷

The above-noted basis for the outstanding rejection is believed to be clearly improper as Tamaki is not directed to a device that would have any benefit from “driving design changes”. Tamaki is clearly directed to a device utilized well *after any* type of design is implemented as Tamaki is directed to a device to ensure that parts are adequately stocked; which clearly takes place well *after any* design is implemented. The test simulation in electronic circuit design in Tegethoff has no relevance whatsoever to such a system as in Tamaki. Further, what the basis for the outstanding rejection has not even considered or addressed is why the noted teachings in Tegethoff would be relative to Tamaki as Tamaki is not directed to any “prediction concerning operation, simulation, etc.”.

In addressing the above-noted comments as to why one of ordinary skill in the art would not combine the teachings of Tamaki and Tegethoff, the outstanding Office Action recognizes that for a proper combination of teachings the prior art reference must either be in the field of applicants’ endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicants was concerned, in order to be relied upon as a basis for a rejection of the claimed invention.⁸

Applicants submit Tamaki and Tegethoff are not in the same field of endeavor and are not directed to solving a same problem.

⁷ Office Action of September 20, 2007, the sentence bridging pages 17-18.

⁸ Office Action of September 20, 2007, page 18.

In addressing the above-noted position that Tamaki and Tegethoff are not in the same field of endeavor, the outstanding Office Action on page 18 provides an explanation of the operation of the device of Tegethoff, emphasizing that Tegethoff is directed to a method for manufacturing test simulation in electronic circuit design. Applicants agree with that statement. However, as discussed above in detail a method for manufacturing test simulation in electronic design as in Tegethoff is completely *irrelevant* to the system of Tamaki which is directed to a production planning system for actually manufacturing different products. Again as discussed above, Tamaki is clearly directed to a device utilized only after a design is implemented. Tegethoff is directed to a design process.

One of ordinary skill in the art could not have combined the teachings of Tegethoff to those of Tamaki since Tamaki is not directed to a design process. Teachings of a design process as in Tegethoff are completely irrelevant to Tamaki.

Moreover, the outstanding rejection merely repeats Tegethoff allowing early prediction of manufacturing behavior drive design changes. However, the outstanding rejection still has not addressed why one of ordinary skill in the art would simulate electronic circuit design such as taught by Tegethoff in the system of Tamaki that ensures the parts are adequately stocked.

In such ways, applicants respectfully submit the further combination of teachings of Tamaki in view of Tegethoff is traversed by the present response.

In view of the foregoing comments applicants respectfully submit the claims as currently written clearly distinguish over the applied art.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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